

CIRCULAR No. 92

INFECTIOUS ABORTION AND STERILITY IN COWS.

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Every dairyman should heed the following facts concerning infectious abortion. Cows are liable to abortion from a great variety of causes, some of which, like mechanical injuries and poisonings, are purely individual to the animal and show little tendency to extend to other members of the herd. But every case should be regarded as infectious until proven otherwise, and should be treated as recommended hereafter in this circular. If such procedure were generally followed by dairymen, the great losses from this disease would be greatly diminished.

The Cause of Infectious Abortion is a germ called the *Bacillus* of Infectious Abortion which swarms in the tissues of aborted fetuses and in the vaginal discharges of infected cows. The germs are not transmitted through the air, but require more or less direct contact. They die quickly upon exposure to light and drying, but will live for weeks in the moist vaginal discharges or in the bodies of aborted fetuses. Stable fed closely confined dairy cows are especially likely to be affected, but the infection may become widely spread to range animals. The introduction of the disease into a previously clean herd is followed by heavy losses from the death of calves prematurely born, and especially from the decrease of milk production and the frequency of sterility in the cows that "slip their calves."

The disease is propagated by the transfer to healthy cattle of infectious material from the aborting cows in the following manner:

(1) By feed or water which has been contaminated from the vaginal discharges of infected cows. In this way animals may contract the disease as readily at pasture as in the stable or corral. Healthy cows are frequently infected by licking up infectious material from the soiled flanks of infected cattle.

(2) By close contact of diseased and healthy cattle. The infectious discharges may be transferred to the external genitals of healthy cattle through the contact of the switching tail of a diseased cow, or by other means.

(3) The disease is thought to be frequently transferred by the male. Bulls that have covered affected cows seldom show a diseased condition themselves, but unless disinfected, are capable of transmitting the disease to susceptible cows during coition.

What Dairymen with Infected Herds Should Do to Stop Losses From Abortion.

(A) Isolate at once every cow that develops symptoms of approaching abortion. These symptoms are rapid swelling of the udder, swollen vulva, whitish discharge from the vulva, sinking in of the ligaments above the base of the tail in the way that occurs in cows about to calve normally. Infectious abortion does not often affect the general health of the cow, except in cases where injury results from the retention in the womb of a dead calf, or when there is failure to completely expel the afterbirth. Infectious abortion is a disease of the fetus and its membranes rather than of the mother.

(B) Whenever a cow aborts remove the fetus, the afterbirth and all discharges, and burn or bury them in an isolated place. Thoroughly cleanse and disinfect the external genital organs, hindquarters, hips, thighs, and tail with 3 per cent compound solution of cresol (lysol). This is prepared by adding three ounces (six tablespoonfuls) of the lysol to each gallon of water used. Douche the womb with a 1 per cent solution of cresol (two tablespoonfuls to the gallon of water), twice on the day that the afterbirth is expelled, and daily thereafter until all discharge ceases. Use copious amounts of the douche. If remains of the afterbirth are retained in the womb, an attempt should be made to remove them within forty-eight hours after the calf is passed. This may be facilitated by the injection of large quantities of warm one per cent compound cresol solution. A convenient way of introducing the douche is through a comparatively stiff rubber tube. The liquid being passed into the tube through a tin funnel or from a pail suspended above and back of the cow. However, a pump forcing the solution from a bucket through a small hose is more likely to cleanse the organs thoroughly. Always place the pump and hose in a *strong* solution of disinfectant (3 per cent compound solution of cresol) before using it again. When all discharge has ceased, the cow may be returned to the herd, but so long as the tail becomes the least bit soiled, she should remain isolated. To be on the safe side, we recommend isolation in every case for at least thirty days.

(C) The aborting cow should not be bred for at least ten weeks. If properly douches all discharges cease much sooner, but the genital organs require that length of time to regain their normal condition.

(D) In order to reduce to a minimum the possibility of a bull transmitting the disease, where a separate bull can not be kept for the infected cows, thoroughly cleanse and disinfect the sheath of the bull before and after service. Clip the long hairs of the prepuce and sheath, and thoroughly wash the sheath with a 1 per cent compound cresol solution before and after each service.

(E) Disinfect the milking stable thoroughly at least once a month, as directed in the circular on disinfection of stables. This circular can be obtained on application to the Director of the California Agri-

cultural Experiment Station, Berkeley, California. Spread the manure from the stable in some field where cattle are not pastured. Thoroughly cleanse and disinfect the external genital organs and hind quarters of *all* cows in the milking barn at least once a day with 3 per cent compound cresol solution, but do not inject into the vaginas of the presumably pregnant and healthy cows.

What Dairymen with Healthy Herds Should Do to Prevent the Introduction of Abortion.

If possible keep all newly purchased pregnant animals isolated until calving at which time they should be treated as recommended in section (B) above. If a case of abortion occurs in the herd, it should be treated as if it were an infectious form of the disease. Do not permit the bull to serve animals not belonging to the premises.

REMEDIES OF UNCERTAIN VALUE.

Contagious Abortion Bacillus Vaccine is a preparation made from the germs of the disease, which is now being used extensively, for the purpose of immunizing the cows. The preparation has been in use such a short time that its value, if any, has not yet been demonstrated.

Carbolic acid has frequently been tried in various ways as a remedy for this disease. As a disinfectant for use about the stable, or as a douche for the cows, it is inferior to the compound solution of cresol recommended above. Its use in a diluted form as a medicine to be sprinkled on the feed or to be injected under the skin of the affected cow is of questionable value. Many dairymen, including some of the Agricultural Experiment Stations, have used it with apparently excellent success. On the other hand, numerous breeders and investigators claim no success whatever with it. The difficulty in obtaining crucial evidence as to the effectiveness of this or any other remedy for this disease lies in the fact that many cows undoubtedly acquire a measure of immunity after one or two attacks.

Useless Nostrums.

There is at present no known specific remedy for infectious abortion. Many of the so-called "cures" on the market have as their basis a carbolic acid solution. Others are absolute fakes. The good results frequently reported from the use of these can usually be attributed to the fact that the animals have at the same time been subjected to a very careful and continuous external disinfection.

Treatment for Sterility.

To promote conception it is advisable to irrigate the vagina one or two hours before coition with a solution of sodium bicarbonate.

Use two heaping tablespoonfuls of ordinary baking soda to the gallon of lukewarm water. Many cows that have aborted fail to conceive because of a diseased condition of the ovaries resulting in the formation of cysts and small tumors. When such a condition exists it is advisable to attempt rupture of the cysts or squeeze out the tumors by the pressure of the hands applied through the walls of the rectum or vagina. A qualified veterinarian should be employed to perform these operations.

Practical Suggestions.

Cows which have aborted one or two times should be disposed of only if they fail to conceive after a subsequent covering, provided they have received suitable disinfecting treatment. By keeping pregnant animals the disease will be brought to a standstill more quickly than if new susceptible material is continually added in their place. Some cows apparently become immune without aborting. It is the history of the disease in the great majority of herds that after reaching its height, it gradually subsides of its own accord until only a few slips occur each year or it may disappear entirely. In herds where abortions have not occurred for several years, or at least only rarely, the owner should take particular pains to prevent its introduction. Every case of abortion should be regarded as suspicious until proven otherwise. If a slip occurs the cow should be isolated at once and treated as directed above. The portions of the stall or corral contaminated by her discharge should be disinfected, or if the abortion has occurred at pasture, the fetus and afterbirth should be searched for and removed and the infected spot of ground where they have lain should be burned over.